

The opinion in support of the decision being entered today is *not* binding  
precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* KENICHI OTANI, YOSHIAKI KUMAMOTO,  
KOICHI SAGARA, SHINJI KODAMA, MINORU GOTO,  
SUSUMU FUJINAMI, TOKUO TSUURA, SHINJI OTAKURA,  
TAKEHIKO TOJO, YUKIYA SATO, MASATAKA ISHIKAWA,  
SHINGO ODAJIMA, and MASANORI TAKITA

---

Appeal 2007-1664  
Application 09/868,040  
Technology Center 3700

---

Decided: July 24, 2007

---

Before WILLIAM F. PATE, III, HUBERT C. LORIN, and  
JENNIFER D. BAHR, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

Kenichi Otani et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 11, 12, 15, 17, 35, and 36. Claims 13, 14, 16, and 18-34, the only other pending claims, have been withdrawn from consideration by the Examiner. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

Appellants' claimed invention is directed to "a molded article made mainly of pulp which involves no reduction in bottle strength, has a satisfactory appearance, and has a depression or a projection of prescribed shape around the opening or the body thereof" (Specification 2).

Independent claims 11<sup>1</sup> and 12 are representative of the claimed invention and read as follows:

11. A molded article made predominantly of pulp  
and comprising:

bottom portion;

and a body portion,

wherein an angle between an outer surface  
of a side wall of said body portion and a ground  
contact plane of said bottom portion is 85° or  
greater, said molded article is seamless, a height of  
said body portion is 50 mm or more, said molded  
article has corners having center portions of a  
thickness T2 that is greater than a thickness T1 of a  
portion that is not one of said corners, and said

---

<sup>1</sup> In light of the Examiner's Communication mailed December 23, 2005, the November 22, 2005 notation of approval to enter the Amendment filed August 10, 2004, and Appellants' Communication filed August 29, 2005, we understand the version of claim 11 included in the Amendment filed August 10, 2004 and in the Appendix filed August 29, 2005 to reflect claim 11 of record.

thickness T2 continuously tapers into said thickness T1.

12. A molded article made predominantly of pulp and comprising:

a bottom portion; and

a body portion,

wherein an angle between an outer surface of a side wall of said body portion and a ground contact plane of said bottom portion is 85° or greater, said molded article is seamless, a height of said body portion is 50 mm or more, and said molded article has corners of a density  $\rho_2$  that is smaller than a density  $\rho_1$  of a portion that is not one of said corners.

The Examiner relies upon the following as evidence of unpatentability:

Taylor	US 1,966,469	Jul. 17, 1934
Clay	US 2,042,210	May 26, 1936
Kieckhefer	US 2,530,124	Nov. 14, 1950
Hatch	US 2,738,914	Mar. 20, 1956

Appellants seek review of the Examiner's rejection under 35 U.S.C. § 103(a) of claims 11, 12, 15, 17, 35, and 36 as unpatentable over Kieckhefer or Clay, alone, or further in view of either Hatch or Taylor.

The Examiner provides reasoning in support of the rejections in the Answer (mailed November 17, 2004). Appellants present opposing arguments in the Appeal Brief (filed August 10, 2004) and Reply Brief (filed January 18, 2005). Appellants' counsel presented oral argument on July 12, 2007.

## OPINION

Appellants state that claims 11, 15, and 35 stand or fall together and claims 12, 17, and 36 stand or fall together (Appeal Br. 3). Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we focus our attention on independent claims 11 and 12, with claims 15 and 35 standing or falling with claim 11 and claims 17 and 36 standing or falling with claim 12.

We turn our attention first to the rejection of claim 12, which recites that “said molded article has corners of a density  $\rho_2$  that is smaller than a density  $\rho_1$  of a portion that is not one of said corners.” Each of the references applied by the Examiner in the rejection is directed to a molded pulp article having corner portions and portions that are not one of the corner portions. Additionally, Kieckhefer, for example, teaches a thickening 10 in the region of the corner joining the side wall 4 and bottom 5 of the cup. None of the references applied by the Examiner expressly discloses the relative densities of the corner portions and portions that are not corners. In addressing this limitation, the Examiner asserts “the molded container of Kieckhefer inherently has a density  $\rho_2$  being smaller than  $\rho_1$  at portions 5 and 4 due to the stamp molding process” and “the molded container of Clay inherently has a density  $\rho_2$  being smaller than  $\rho_1$  at portions 5 and 4 due to the stamp molding process” (Answer 4). Appellants argue, in essence, that the Examiner has not indicated where support is found in the record for this assertion (Appeal Br. 6). In response to Appellants’ argument, the Examiner adds that “elementary physics dictates” that “when a sheet of pulp material (paper) undergoes the stamp molding process, the region that compresses thinner would be denser; thus, the density is greater (density=mass/volume)” (Answer 6).

Under principles of inherency, when a reference is silent about an asserted inherent characteristic, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). As the court stated in *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) (quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. [Citations omitted.] If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

The problem with the Examiner's rationale is that it assumes the thinner areas, such as Kieckhefer's side walls 4, have been compressed relative to thickened areas 10 at the corners. While it may be possible to form the cup in this manner, this will not necessarily be the case. The density of a molded article in any particular portion thereof depends on the amount of material that flows into that portion during the molding process, a variable that is determined by a variety of mold process parameters, such as localized pressures, temperatures, and material viscosities, for example. The Examiner has not pointed to any teaching in the applied references that would have indicated to one of ordinary skill in the art that the molding process parameters have been set so that a higher density will necessarily result in the thinner portions of the molded article and thus has not presented

a prima facie case that the density of the portions at the corners of either Kieckhefer's cup or Clay's tray will necessarily or inherently be smaller than the density at portions of the cup or tray that are not corners.<sup>2</sup> The rejection of claim 12, and claims 17 and 36 depending therefrom, cannot be sustained.

We turn our attention next to the rejection of claim 11 as unpatentable over Kieckhefer or Clay, alone, or further in view of Hatch or Taylor.

Appellants contend that neither Kieckhefer nor Clay teaches an "angle between an outer surface of a side wall of said body portion and a ground contact plane of said bottom portion of 85° or greater" as recited in claim 11 (Appeal Br. 4-5) and that Hatch and Taylor do not remedy the deficiency of Kieckhefer and Clay (Appeal Br. 7). For the reasons that follow, we conclude that the combined teachings of Kieckhefer and Hatch would have prompted a person of ordinary skill in the art to provide Kieckhefer's cup with an angle within the range claimed. We therefore sustain the rejection of claim 11, as well as claims 15 and 35 depending therefrom.

Kieckhefer is directed to cups made of pulp and other materials adapted for nesting (Kieckhefer, col. 1, ll. 1-2 and 9). Kieckhefer points out that the angularity of wall usually required commercially permits the walls to wedge so tightly when nested as to hinder the separation of the cups because of the friction of the area of the wall surface in nested contact (Kieckhefer, col. 1, ll. 18-23). On the other hand, a wall angularity that will virtually eliminate friction between the wall surfaces so reduces the size of the bottom in relation to the size of the lip of the cup as to make the cup appear awkward and make the cup top-heavy and easy to upset (Kieckhefer,

---

<sup>2</sup> It is therefore not necessary to discuss the Otani Declaration (filed November 7, 2003) in reviewing the rejections of claim 12.

col. 1, ll. 23-28). Kieckhefer also points out that “the angle of the cup wall to the vertical is only acceptable commercially if confined within an extremely narrow range of angles” (Kieckhefer, col. 1, ll. 6-8). Kieckhefer does not specify the precise metes and bounds of that commercially acceptable “extremely narrow range of angles,” but does disclose, in both the embodiment of Figs 1 and 2 and the embodiment of Fig. 3, a wall angle with respect to the axis of the cup of approximately seven degrees (i.e., an angle of  $83^{\circ}$  to the contact plane of the bottom portion) and identifies that angle as one “which the experience of the industry has found to be desirable” (Kieckhefer, col. 1, ll. 59-60 and col. 3, ll. 4-7). To overcome the wedging problem discussed above while still permitting a commercially acceptable wall angle, Kieckhefer provides a cylindrical surface deviating from the general frusto-conical external surface of the wall 4, thus resulting in thickening of the wall at 10 and increasing the radius of the curve at 11 as compared with the interior curve at 6 (Kieckhefer, col. 2, ll. 16-24).

Kieckhefer therefore discloses a wall angle relative to the bottom contact plane within an extremely narrow range that includes  $83^{\circ}$  and permits nesting without wedging. Hatch also is concerned with providing molded pulp containers, albeit in the form of berry boxes, having good nesting characteristics (Hatch, col. 1, ll. 15-16 and 29-31). Hatch teaches that, to achieve good nesting characteristics, the angle 30 of wall taper relative to the container axis can vary between about 5 and 15 degrees (i.e., an angle of  $75^{\circ}$  to  $85^{\circ}$  to the contact plane of the bottom portion), depending on the height of the boxes and the walls thickness (Hatch, col. 2, ll. 19-25).

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of

ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

*KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007).

In light of the proximity of an 85° angle to the 83° angle specifically taught by Kieckhefer, Hatch's disclosure that good nesting characteristics can be attained with wall tapers between 75° and 85° and the absence of any evidence indicating that the difference between 85° and 83° is critical with regard to meeting commercially acceptable standards and preventing wedging<sup>3,4</sup>, we find that one of ordinary skill in the art at the time of Appellants' invention would have inferred that a wall angle of 85° falls within the range of commercially acceptable angles taught by Kieckhefer. We therefore conclude that it would have been obvious, based on the combined teachings of Kieckhefer and Hatch, to provide Kieckhefer's cup with a wall angle within the range of 85° or higher recited in claim 11.

---

<sup>3</sup> The Otani Declaration is directed to the ratio (T2/T1) of thickness at the corner portions and other portions and the ratio ( $\rho_2/\rho_1$ ) of density at the corner portions and other portions and makes no showing with regard to the effect of wall angle on article characteristics.

<sup>4</sup> *See In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990) (Cases have consistently held that, where the difference between the claimed invention and the prior art is some range or other variable within the claims, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.)



Appellants argue that Kieckhefer teaches away from an angle of 85° or greater between the wall and the contact plane of the bottom portion, because cups having an angle within such range would stack too closely to prevent wedging (Appeal Br. 5 and 7-8) but do not provide any evidence to support this argument.<sup>5</sup> While Kieckhefer specifically discloses an angle of 83°, Kieckhefer does not indicate that an angle of 85°, which is very close to 83°, would fall outside of the “extremely narrow range of angles” considered commercially acceptable or would be too great to prevent wedging, especially with Kieckhefer’s thickening at 10, designed to prevent wedging. Appellants’ argument thus fails to persuade us of error in the Examiner’s rejection of claim 11.

---

<sup>5</sup> Attorney's arguments in a brief cannot take the place of evidence. *In re Pearson*, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). Arguments relying on factually unsupported assumptions to rebut a prima facie case of obviousness “can hardly be considered factual evidence.” *See In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984).

Appeal 2007-1664  
Application 09/868,040

### SUMMARY

The decision of the Examiner to reject claims 11, 12, 15, 17, 35, and 36 is affirmed as to claims 11, 15, and 35 and reversed as to claims 12, 17, and 36.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

### AFFIRMED-IN-PART

JRG

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314